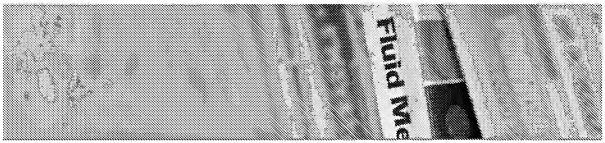

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Crosslinked poly(vinyl alcohol) supports for the immobilization of a lipolytic enzyme

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Résumé / Abstract
Different esters of crosslinked poly(vinyl alcohol) (PVA) were synthetized. They were developed for protein fractionation and immobilization. PVA was crosslinked with epichlorohydrin (CL-PVA) and esterified with linear fatty acids of different length (Cn-CL-PVA). A characterization of the obtained products was made. The swelling behavior, the solubility, and the percentage of esterification were examined. Values of equilibrium water content of about 81% were reached for CL-PVA samples. The polymers' stability and morpholgy were also investigated. Thermal analysis showed an increase in matrices stability, while SEM data showed the superficial development due to crosslinking and esterification reactions. Moreover, evident morphological inhomogeneities, mainly in the commercial and crosslinked products rather than in the final polymer, were present. Finally, immobilization experiments with a commercial crude of Candida rugosa were performed. Experiments showed a greater affinity of the protein for carbon chain length ranging from 8 to 12. Data indicated that compared to Celite 545, C8-CL-PVA was a better support for enzyme immobilization by physical adsorption, confirming the fact that microbial lipases prefer hydrophobic supports.

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